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MOTOR PROCESSES AND CONSCIOUSNESS[1]

IN view of the many different attempts which have been made to explain the relation between motor processes and consciousness, one can hardly be surprised if his own statements on this matter do not command universal acceptance. The problem is one which a large number of writers agree in regarding as the most important special problem in psychology at the present time, but the solutions differ widely. Perhaps the best way to meet one's critics under such circumstances is to turn critic oneself and examine the other views in the field and by such a comparative study exhibit the virtues, if there be any, of the position to which one is himself committed.

Among the first writers to emphasize the importance of motor processes as general conditions of consciousness were Dewey[2] and McDougall.[3] Dewey makes the statement that consciousness is conditioned by the action of the whole nervous arc, and not by any single section or part of the arc. Consciousness does not, therefore, depend merely upon sensory impulses; it is determined in character by the motor end of the process as well as by its sensory beginning. McDougall finds in new motor processes the chief conditions for the rise of consciousness. It is only when the individual is working out a readjustment in active response that consciousness arises.

These two general theories are both suggestive, but leave, even if they are accepted, all the details to be worked out by later investigation. We can not be satisfied with so broad a statement of the general relationship if the principle is to serve as a guide to concrete empiricism. To say with McDougall that new motor processes are the conditions of all consciousness leaves us with the necessity of showing how certain particular phases of consciousness are related to particular types of motor process. Suppose we say, for example, that the adjustments of the eyes in the visual per-

[1] Earlier papers in this series were published in Vol. V., p. 676, and Vol. VI., p. 36, of this JOURNAL.

[2] Dewey, "The Reflex Arc Concept," pp. 358 ff., *Psychological Review*, 1896.

[3] McDougall, three articles in *Mind*, 1898.

ception of objects are important conditions for the rise of processes of recognition. We are still left with details unsolved as to the specific phase of the recognition process which is related to the sensory impressions on the retina and the specific phases of the process which are related to the motor element. We are simply called upon by McDougall's general formula to assume a broad parallelism between novel motor processes and consciousness. The same is true of Dewey's formula. To say that consciousness is related to the action of the whole reflex arc does not give us any definite answer to the question, What modification in consciousness will result from a modification in the motor outlet of a given stimulation? It is perfectly clear that like sensory stimulations do at different times pass through the central nervous system of an individual and emerge into the active organs through different channels. What is the effect upon conscious life of a modification in such cases of the avenue of motor discharge?

Besides these general theories there are a large number of more specific theories. Thus Münsterberg holds[4] that the openness of the motor channels is always related to the vividness of consciousness, and that the direction of a motor discharge conditions its value. Royce[5] holds that ideas are always related to activities. He says: "Our mental images of outer objects are never to be divorced from our reactions." Baldwin[6] also makes the reaction phase of an idea the *general* characteristic. These writers have all contributed important examples of the relation between motor processes and special phases of consciousness, but what we miss in these special examples is an exhaustive account of the relation of all motor processes to consciousness. If it is true that ideas are determined in character by their motor relations, how much more must it be true that percepts and the immediate processes of recognition are determined by motor processes. If it is true that vividness and value are related to motor discharges, how much more must it be true that the concrete relationship between conscious elements such as we find in space relations is also dependent upon the direction of motor discharges. While we are justified in criticizing Dewey and McDougall as too general, we must criticize these writers because they have furnished us with formulas which are not comprehensive enough.

The formula needed is one which is at once comprehensive and capable of application in detail to specific cases of various kinds. Motor processes are evidently related to some very general aspect of

[4] Chapter 15 on "Die Aktionstheorie," "Grundzüge der Psychologie," 1900.
[5] "Outlines of Psychology," p. 285 *passim*.
[6] "Mental Development," p. 313 *passim*.

consciousness, and yet this general aspect must in each particular case appear in some very definite, concrete manifestation. A phase of consciousness which is thus general and at the same time specific in its concrete manifestations is to be found in the fact of organization. Thus when all of the sensory elements of a given moment are organized into a single compact experience the special organization of the moment is a concrete specific fact, but it is a fact which exemplifies one of the most general and characteristic phases of consciousness. Thus when one has a sensation of red he relates this sensation to other phases of experience such as the background and the surroundings of the color in a definite, concrete manner. That he relates one element to the other factors of consciousness is an exhibition of the most characteristic fact in all mental life.

The fact of mental organization is directly related to the fact of the individual's reaction. As has been repeatedly pointed out in earlier discussions, if one asks why a given sensation has value for an individual he can not find the answer to the question in any consideration of the quality or intensity of the sensation itself. The sensation is of value by virtue of the active adjustment to which it leads, and this active adjustment will in turn be related to the complex of experience into which the sensation enters. Thus we find ourselves discussing at once motor responses and facts of conscious organization. That the two groups of facts are closely related can be shown by an examination of specific cases, and thus we shall be able to give the general formula detailed content and at the same time verify the broader statements which refer to the universal importance of motor processes as conditions of all conscious organization.

In the two preceding papers of this series feelings and space perception have been discussed as specific examples of mental organizations related to motor processes. All that was there said to show the advantages of those special explanations can now be turned to account in favor of the general formula of the dependence of all types of organization upon motor processes.

A new example of the specific application of this general formula may be found in the solution which it offers of the difficult question, why there are within experience different degrees of unity. Thus, to use Professor James's illustration, we recognize for certain purposes the table as a unity and for other purposes we recognize the table as made up of legs and top, each of the parts being in itself a unity. Certainly the reason why experience breaks up at times into larger and at other times into smaller unities must be clearly understood before we can have any coherent account of mental organization.

One of the recent writers who has dealt with this problem without utilizing in any way the motor processes is Professor Dodge.[7] Professor Dodge is led to his discussion of unity by his experiments on ocular movements, which experiments seem to furnish evidence against the explanation of perceptual unity as dependent upon muscle sensation. For some time Professor Dodge has been pointing out the difficulties with the movement sensation theory in its various forms. He now comes to the constructive treatment of the problem and attempts to show that the various retinal elements are organized into unitary groups through similarity in their sensory processes or in the "life history" of neighboring nervous elements. Thus if an external object stimulates a certain part of the retina, the life history of a group of retinal elements excited by the object will have a unity which depends upon the physiological fact that these elements are for a period of time stimulated in like fashion.

This position does not differ very much from that earlier advocated by Lipps.[8] Lipps also looks for the unity of mental processes in the fact that neighboring points on the retina are frequently stimulated from objective sources in the same way.

Both of these writers find the unity of mental processes satisfactorily explained by the unity of the external sources of stimulation. It is not easy to understand how they have overlooked the fact that subjective unity is of a totally different type from objective unity. For example, in the illustration used by Professor James, it is quite possible for a given observer to treat the mass of sensory experiences which he receives from a given table in more than one way. The unity in this case changes according as the subjective motive is modified. Certainly no explanation that depends entirely upon external reality will serve to account for this shifting of the observer's interest and type of thought.

In the case of Lipps there is very definitely assumed back of the unity of the retinal processes a combining and unifying entity which utilizes the qualitative likenesses of the retinal processes. Professor Dodge does not refer explicitly in his discussion to any unifying subject which utilizes the like sensations that come from the retina, but it is obvious that without some such assumption mere likeness of the retinal processes would not serve as a bond between the different sensory elements of experience. And even if an integrating subject is assumed, we are forced to ask what motives there are in this subject's life which lead him to make up his experiences now on

[7] "An Experimental Study of Visual Fixation," *Psychological Review, Monograph Supplement*, No. 35, pp. 72 ff.

[8] *Psychologische Studien*, 1885, pp. 1 ff. And also "Grundthatsachen des Seelenlebens," pp. 515 ff.

the one scale and again on another. When the matter is put in this form we see the advantage of recognizing that the subject is fully understood only when he is looked upon as conditioned in his concrete experiences by certain reactive tendencies which are radically different from the sensory elements which come from the outer world.

There is large justification, as has been pointed out in an earlier discussion, for the statement that sensations are objective processes constantly presenting themselves to consciousness, but determined in their value for conscious life by considerations that grow out of the uses to which they are put. These uses are always related to behavior, which is the active and expressive side of the subject's life. If the motives of behavior are such as to lead the subject to react upon large sections of his environment, then the sensory elements from these larger sections of the environment will naturally be grouped together. We may say that this is in response to a subjective demand, but we have by our formula of reaction defined more fully the nature of the subjective demand. We have recognized the fact that the subject is himself a complex capable of scientific definition through a study of his special functions.

It is interesting to note in Professor Dodge's discussion that when he gives a figurative account of the way in which retinal elements come to act in unity he represents the different groups of retinal elements as bound together by what he calls "rings of twine" (p. 74). One is prompted to ask whether the pegs themselves which Professor Dodge uses in his illustration furnish the twine which binds them together, or whether this binding is done by some outside agent. If it is done by some outside agent, then obviously all of the earlier discussion of likeness in life history is irrelevant except in so far as it can be shown that the outside agent is interested in qualitative likeness in visual processes. If we attempt to show why the outside subject is interested in such likenesses we find ourselves confronted once more with the problem with which we started, and we certainly can not free ourselves from this unproductive circle by referring to the unity that exists in the objects which impress our senses. Physical science long ago pointed out that the whole scheme of physical organization differs radically from the appearances which present themselves in consciousness. The fundamental reason why individual experience is of value is that in this experience external agencies are reduced to a wholly new form of arrangement. The new arrangement is significant to the individual in his personal life, but has no objective value until it comes back into the world of things in the form of a reaction of the individual upon these things. Professor Dodge speaks in his discussion of the fact that behavior "standardizes" the group organization of various

parts of the retina (p. 76). It is just this standardizing of the group organization which gives them permanence and value in subjective life. Why not recognize immediately that there is no fundamental distinction between standardizing and originating such an organization? Indeed it is very difficult to see how the process of standardizing could differ radically in character from the process of grouping itself. And certainly if any writer continues to use the two processes as separate, the burden of demonstrating the reason for two different kinds of processes rests with him.

The formula of activity which has been suggested as a solution for the problem raised by a critical examination of Dodge and Lipps has the widest application in explaining the diversities and harmonies in our conscious processes of recognition. Whenever we recognize two seen things as alike, we must attribute the recognized likeness not to the identity of retinal excitations, but rather to the fact that whatever may be the retinal cue, the reaction in the two cases is of the same type. We never see the same object twice in succession from the same point of view, and we never get from any object the same group of sensations. With every motion of the eye there is a shifting of the relation between the sensory facts of experience. And certainly with every one of the grosser bodily movements there is a complete breaking up of the sensory arrangement of the situation. We accept these fluctuations in sensation without the slightest disturbance of our personal lives. It is not important that we should discriminate minutely just how much of a person's face we can see, or just how much of the outline of a familiar object falls upon the retina. Anything will do which gives us a cue for the right action. In our discussion of perception it was pointed out that we do not fill in the sensory elements in the blind spot, or in the misprinted word; we simply utilize the deficient sensory experience in terms of our highly organized methods of response.

What is true in dealing with processes of perceptual recognition is strikingly evident when we come to deal with ideas. Here is a sphere of experience in which, as Royce and Baldwin have pointed out, the active processes are of first-class importance. Different individuals have the greatest variety of mental images which they retain in memory from their contact with the objects in the world about them, and yet there is a certain agreement in their modes of behavior whenever one of these ideas is called up through association. So also with the different periods of individual experience. The important fact in defining the psychological character of a general idea is not that we should always discover like elements in the different examples of this general idea; it is important only that

whatever the image in experience, the reaction shall always be the same. The reaction may get itself systematized in developed human experience into the mere act of articulation, or it may be an elaborate process of adjustment to practical demands. In any case the motor phase of the process is general and subjective in its character, while the content factors are particular and in themselves unorganized.

Unity of percepts and unity of ideas are accordingly phrases which describe an aspect of consciousness dependent on motor tendencies. Unity may be of various different kinds in different concrete cases; the formula is thus capable of bringing together under a single principle many different facts. Unity is, on the other hand, always a manifestation of the essential organizing tendency of mental life. We see, therefore, how this explanatory formula meets the demand which was expressed at the outset for a general formula which shall at the same time serve to guide in a detailed account of mental processes.

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SOCIETIES

THE SEVENTEENTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE seventeenth annual meeting of the American Psychological Association was held in Levering Hall of the Johns Hopkins University on Tuesday, Wednesday, and Thursday, December 29, 30, and 31, 1908. This was convocation week of the American Association for the Advancement of Science, and a notable company of scientific men, variously estimated at from two thousand to twenty-five hundred in number, were attracted to Baltimore by the programs of the society and the numerous organizations affiliated with it. If these numbers are a gauge of scientific activity, there is reason for abundant optimism regarding the status of research in America, for at no previous time have so many men of science been gathered together. The question has been repeatedly raised, however, whether the real aims of the scientific societies are best furthered by these large meetings with their surfeit of attractive programs, or whether a desirable concentration of interest is not secured by holding the sessions of the several societies in different cities.

This question was a live issue before the Psychological Association when the choice of the next place of meeting came up for discussion. Some of the members advocated segregation, and urged the acceptance of the invitation to go to New Haven, where the American

Philosophical Association will probably hold its next meeting. Others preferred to meet in Boston, together with the biological, anthropological, educational, and other sections of the American Association for the Advancement of Science, postponing the holding of a separate meeting until the following year, when the American Association for the Advancement of Science expects to go to Minneapolis. The choice was finally left to the Council with instructions to decide in the light of a vote of preference to be obtained from the entire membership.

Of the total enrollment of two hundred and twenty members scarcely one fourth were at Baltimore; and the attendance upon the meetings was not large, except at the joint programs. One session for the hearing of papers was held with Section L—the newly formed educational section of the American Association for the Advancement of Science—and one with the Southern Society for Philosophy and Psychology. On the afternoon of the second day the Southern Society and the American Philosophical Association united with the Psychological Association to hear the presidential address of Professor Stratton upon "The Betterment of Rival Types of Explication." The subject of the functional *versus* the structural or descriptive attitudes in psychology—a somewhat familiar topic for presidential addresses—received a fresh and suggestive handling from the point of view of the nature of the concept of cause which each type of explication involves. In the evening of the same day the societies met together again, to hear the address of Professor Münsterberg, president of the American Philosophical Association, upon "The Problem of Beauty." This eloquent defense of the absolute nature of beauty held the attention of a large audience. Following the address, the societies were entertained at the Johns Hopkins Club at a joint smoker. Still a third presidential address, that of Professor Sterrett before the Southern Society, was delivered on the afternoon of the third day, the theme being "The Proper Affiliation of Psychology—with Philosophy or with the Natural Sciences?"

That there has been no diminution in activity within the field of animal psychology was evident at the opening session. Professor Porter reported a continuation of the studies in the learning process and visual discrimination of birds, such as have characterized his laboratory at Clark University for some time. His assistant, Mr. Kallom, has found that ring-neck doves and homing pigeons learn to discriminate colors in from one third to two fifths fewer trials than the English sparrow. The discrimination of forms is much more difficult than the discrimination of colors. Professor Porter himself has been observing two single yellowhead parrots, and described

their behavior in detail. Instances of sudden imitation occur, not all of which can be explained as cases of so-called deferred imitation.

The problem of imitation in monkeys has been freshly and vigorously attacked by Mr. M. E. Haggerty. Three animals were trained to solve a number of ingenious mechanical problems in order to get food. Ten monkeys in the New York Zoological Park were then tested for evidences of imitation in learning these same tricks. A monkey was first given ample opportunity to acquire the trick himself. After his failure to do this, he was permitted to see another monkey perform the act, and then immediately given a new trial. In sixty per cent. of the instances the animal which had utterly failed to perform the necessary act alone did it after seeing it done by another monkey. In the course of the discussion Professor Thorndike and Professor Watson pointed out the desirability of certain additional control experiments, to determine how far other factors than those of imitation enter in to explain the large percentage of successes.

Professor Yerkes contributed the results of an investigation of the process of habit formation in the dancing mouse, aimed to determine the relation of age, sex, and intensity of inhibitory stimulus to the rate of acquisition. Extended experimentation with a large number of individuals disclosed the somewhat surprising fact that the older mice learn more rapidly than the younger ones when there is a large difference between the visual stimuli to be discriminated; but when the discrimination is a difficult one the younger mice excel. To account for such a difference it is necessary to recognize that the formation of this habit involves at least two distinct factors, namely, sensory discrimination and associative memory. Associative ability appears to improve between the ages of one and ten months, while ability to discriminate differences of illumination decreases. The most favorable intensity of the electric stimulus which furnishes the incentive to learning is found to depend upon difficulty of discrimination: as discrimination becomes more difficult the optimal stimulus is found to approach the threshold. The form of the learning curve is strikingly different for the two sexes.

Illness prevented Dr. Yoakum from reporting his investigation of "The Temperature Sense of Squirrels."

"The Phenomena of Peripheral Vision as Affected by Chromatic and Achromatic Adaptation, with Special Reference to the After-image" was the title of a contribution by Dr. Fernald. The lively interest which this paper aroused centered about its contribution to the question regarding the existence of colored after-images from unperceived color stimuli. Miss Fernald has found that when a

stimulus color through contrast with a white background has its limits so contracted that it is brought just below the threshold, a colored after-image is seen if it is projected upon a background whose degree of illumination is peculiarly favorable to that color.

At the afternoon session Professor Angell, chairman of the committee on the standardization of measurements and tests, presented a statement of what had been done during the year. Regarding types of imagination, it has been found that no one of the common tests is adequate. Tests of ability to command different forms of imagery do not always disclose the preferred form; tests for the form most frequently used do not show which is the most efficient. Moreover, the most useful form of imagery differs with different kinds of work. It is necessary to have tests of the various functional aspects of imagination.

The task of standardizing tests of association and discrimination has been brought so near to completion that Professor Woodworth and Dr. Wells, who have this portion of the committee's work in charge, were able to present a somewhat full report, with recommendations. Less detailed accounts were given of the progress made by the other subcommittees. The work of Professor Seashore upon tests of pitch discrimination is well advanced, and will doubtless be completed in time to form a portion of the forthcoming report of the committee, for the publication of which the association has authorized the expenditure of a sum not to exceed one hundred and fifty dollars.

Before the organization of this committee, two years ago, some doubt was expressed as to the expediency of the undertaking. The fruits of cooperation are already beginning to ripen, however, and the feasibility of a concerted attack upon the problems of standardization is no longer questioned. But the members of the committee alone can not be expected to solve the multitude of problems which must be cleared up before any final recommendations are possible regarding the best methods to be followed in taking many of the common mental measurements. The only possibility of making rapid headway lies through the active cooperation of a larger proportion of the membership of the association with their committee.

Following the discussion of the report of the committee on measurements, Professor Leuba gave a demonstration of a new apparatus for the study of movement and Professor Dodge demonstrated an ingenious lantern chronograph for classroom use. It is to be regretted that no other new apparatus was brought to the meeting for exhibition. In the future it will be the policy of the association to encourage a larger number of exhibits and demonstrations, the first

step in this direction being the appropriation of a certain sum to defray transportation charges on apparatus.

At the largely attended joint session on Wednesday morning, President Stratton called upon Professor Dewey, chairman of the education section of the American Association for the Advancement of Science, to preside. In a paper entitled "Psychological Investigations that will help the Educator," Professor Kirkpatrick asked of the psychologists a much more complete analysis of the complex processes of learning, and a study of them under the working conditions of the schoolroom.

An investigation looking in the direction pointed out by Professor Kirkpatrick, on the process of counting, was described by Professor Judd. The rate of counting a series of sensory impressions is dependent upon the ease with which the individual can establish an adjustment between this external series and an internal series which for many individuals consists in the imaged articulation of the numbers. The process of relating these two series is found to be less complicated and to require less time in certain sense realms, such as hearing, than in others, such as vision, where the necessary movements of adjustment of the sense organ are more complex.

After the discussion of Professor Judd's experimental contribution, Professor Thorndike read a paper in which he advanced the hypothesis that differences in "general intellectual ability" have their physiological basis in differences in the number of axone endings, and in the variety, extent, and excitability of their change of position. The need for some such hypothesis arises from the fact that the closest correlations of general ability with its several factors are found, not among motor abilities or abilities in sensory discrimination, but among the associative and selective processes.

As an improvement in the technique of experimentation in memory, Professor Seashore advocated the plan of using only three or four sensory stimuli which differ from each other in one respect only. Thus, a group of four successive tones, alike in all but pitch, may be given in any one of many arrangements. Among the advantages of using such homogeneous material are the possibility of continuing an experiment indefinitely with the same content and the adaptability of the method to the study of almost any phase of the memory problems.

Professor W. F. Dearborn reported that upon repeating a portion of the memory experiments of Ebert and Meumann he found that what appeared in the original experiments to be a general improvement from special practise is due, in part, to the effects of practise within the test series used. Orientation, attention, and changes in

the technique of learning are adequate to account for the rest of the improvement.

The session was brought to a close after a paper by Professor Witmer upon "The Study and Treatment of Retardation." The clinical, more minute methods of study were contrasted with the statistical methods. Each has a place.

In spite of unusually attractive programs elsewhere, a good number were present to hear the joint program of the afternoon. One of the most valuable contributions was that of Dr. Franz, upon "Sensations Following Nerve Division." Section of the ulnar and median nerves of the arm resulted in losses of sensation similar to those reported by Head and Sherren, but with these exceptions: certain areas of the skin which retained the epicritic sensibility nevertheless showed differences in threshold values so distributed as to indicate an overlapping of the nerve supply. Tests on hair and temperature sensibility also pointed toward the hypothesis of a double nerve supply for both.

Professor Ladd described two cases of cerebral surgery without anesthetics in which the patients retained consciousness throughout. Significant facts regarding the sensitivity of the brain substance and the nature of cerebral localization were pointed out; and the suggestion was made that the partial independence of cortical action which consciousness seemed to exhibit in these two cases gave hint that it may be possible for the life of self-consciousness to attain a complete independence of the brain.

In connection with a tachistoscopic determination of the least observable interval between visual stimuli to the two retinæ, Professor Hill found it necessary to distinguish two ways of attending. The sensorial or mechanical type, involving little ideation, is contrasted with the apperceptive or associative type, involving more complex central processes. The more suggestible observers belonged to this second type.

Professor Ogden essayed a "Contribution to the Theory of Tonal Consonance." Tonal consonance is the conscious correlate of a relatively simple and economic activity of the auditory nerves. How has the characteristic organic disposition arisen which renders the response of the nerves easier when the tones are related in simple arithmetical ratios? It has become established mainly through the racial experience of overtones.

Discussion was lacking upon Professor Ogden's paper and also upon that of Professor Leuba, entitled "The Origin of Religion." But the closing paper of the session, by Dr. Marshall, succeeded in stimulating comment. Dr. Marshall advanced the position that

"intensity" and "vividness" or "clearness," characterizing the focal portion of the field of consciousness, are terms which really refer to the same quality, but with this difference: we use the term "intensity" when we are dealing with sensations, but when we find this same quality in a wider context—perceptual, ideational—we feel the need of a different term, and call it "vividness."

Although the session of Thursday forenoon was largely monopolized by the annual business meeting of the association, time remained for Professor Scott to present "An Interpretation of the Psychoanalytic Method in Psychotherapy." Professor Scott maintained that the success which often attends this method of treatment for hysteria, obsessions, and phobias is really due to its skillful, even though unintentional, use of suggestion. The success of the method does not, then, prove the truth of the theory which underlies it—the theory of a realm of subconscious ideas in which suppressed emotional complexes may exist.

At the final session, Dr. Rogers described an optical apparatus by means of which the fingers, hands, feet, etc., are seen in other directions than their true ones. The displacement is felt so strongly that the kinesthetic sensations entirely fail to correct the illusion, and gross errors of movement are the result. The apparatus is useful in investigating the interrelations of visual and tactual space perceptions.

Professor Whipple presented a communication designed to stimulate interest in the psychology of testimony, a field bristling with problems of theoretical and practical importance to which American investigators have as yet given little attention. The main problems of the "Psychologie der Aussage" were enumerated, the methods discussed and the results to date summarized with a compactness and clearness which merited a larger audience.

At the annual business meeting Professor Judd, of Yale University, was elected president for the coming year, and was also appointed to represent the association on the council of the American Association for the Advancement of Science. To serve on the council of the Psychological Association, Professor Sanford, Professor Lindley, and Professor Thorndike were chosen. Seventeen new members were elected: Professor Berry, of the University of Michigan, Dr. Bingham, of Columbia University, Professor Bolton, of the State University of Iowa, Professor Boswell, of Hobart College, Dr. Brown, of the University of California, Dr. Burrow, of Johns Hopkins University, Mr. Cole, of Wellesley College, Dr. Davis, of the California, Pa., State Normal School, Dr. Ferree, of Bryn Mawr College, Dr. Goddard, of the Training School for Feeble-Minded Girls and

Boys, at Vineland, N. J., Dr. Holmes, of the University of Pennsylvania, Professor McKeag, of Wellesley College, President Pearce, of Brenau College, Professor Pratt, of Williams College, Dr. Starch, of the University of Wisconsin, and Dr. Waugh, of the University of Chicago.

In recognition of the efficiency of the local arrangements for the meetings resolutions were adopted expressing the gratitude of the association to Professor Baldwin, Professor Watson, and the Johns Hopkins University.

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THE FOURTH ANNUAL MEETING OF THE SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

THE Southern Society for Philosophy and Psychology was organized in 1904, and held its first formal meeting at the Johns Hopkins University, Baltimore, Maryland, in December of the same year. The representatives of philosophy and psychology in the institutions in the southern states had not been feeling in any distinct manner the beneficial effects of the two national organizations, the American Philosophical Association and the American Psychological Association, whose influences streamed almost directly westward between more northern latitudes. In endeavoring to bring stimulation and guidance to the southern workers in these topics, the society planned to extend its interests so as to include both philosophy and psychology. This program was undertaken partly in recognition of the interrelations of these subjects, and partly in view of the special needs in the educational developments of the territory which it was to serve. Each succeeding meeting has shown an increasing attendance and interest among its members; and the institutions represented by its membership, from Florida to Missouri and from Maryland to Texas, have appreciably felt its activity and the standards it has brought forward.

The fourth annual meeting of the society was held at the same university on Wednesday and Thursday, December 30 and 31, 1908. It met in affiliation with the American Association for the Advancement of Science, the American Philosophical Association, and the American Psychological Association. More than one third of its members were in attendance.

The society united with the American Psychological Association in a joint session on Wednesday afternoon, one half of the papers presented being read by its representatives, Professors Franz, Hill,

and Ogden. It also joined later with the same association for the address of its president, Professor Stratton, on "The Betterment of Rival Types of Explication," and in the evening of the same day with the American Philosophical Association for the address of its president, Professor Münsterberg, on "The Problem of Beauty." A separate session was held on Thursday afternoon, at the close of which these two associations joined with the society for the presidential address of Professor Sterrett, on "The Proper Affiliation of Psychology."

In making his observations on "Sensations Following Nerve Division" in an individual in whose arm the ulnar and median, and probably also the medial antibrachial cutaneous, nerves had been cut, Professor Franz found many results confirming those noted by Head and Sherren. Some differences on touch indicate that there is an overlapping of nerve supply for the arm, while others on temperature and hair sensations point to a double nerve supply for these sensations, all of which are contrary to the findings of Head.

Professor Hill presented a preliminary report on "Some Aspects of Attention Involved in the Observation of Nearly Simultaneous Retinal Stimuli" as controlled by means of a tachistoscope which exposed illuminated disks to the periphery of both eyes. Suggestion and individual preferences seem to show influence as well as objectively uniform conditions.

It was maintained by Professor Ogden, in his "Contribution to the Theory of Tonal Consonance," that this unique experience may be regarded as the conscious symptom of a relatively simple and economic activity on the part of the auditory nerves. The origin of this function is traced principally to racial experience of overtones which through frequency of stimulation has organized dispositional tendencies.

The papers presented at the joint session by representatives of the American Psychological Association are mentioned in the account of the meeting of that association, pp. 96–97 of this JOURNAL.

In presenting the main features of "A Point of View in Comparative Psychology," Professor Watson took issue with those investigators who have recently endeavored to clear the field for explanations in animal psychology by carefully defining the criteria of consciousness which are designed to be of assistance in the interpretation of the facts of animal behavior. It was held that animal psychology is really embarrassed by the attempts to place the psychic amidst the facts which are obtained by observing behavior under the conditions of control. The tendency of human psychology in its scientific progress to get away from mere introspection as the chief basis for technique, it was urged, should be given greater room in

animal psychology. It is not so much a question of consciousness in the lower animals as, rather, how much phylogenetic interpretation of the psychic series as a whole can with advantage come to us through comparative psychology.

Dr. Dunlap, in his paper on "The Extensity Theory of Pitch," reviewed the several theories of pitch which are more or less claimants for recognition, and called attention to the group of phenomena which are more satisfactorily explained by the extensity hypothesis than by any of the rival theories; namely, obliteration of high notes by low notes, interval estimation, the influence of practise, pathological instances of non-fusing tones, the greater loudness of high tones, and pitch contrast.

In presenting "The Trend of the Clinician's Concept of Hysteria," Dr. Williams rejected Charcot's analysis of hysterical phenomena, reviewed many of the facts of hysterical attacks, and held that they could best be understood as due to suggestibility. Special merit was found in the technique and conclusions of Babinski.

The intellectualistic rather than the voluntaristic view obtained in Dr. Richardson's paper on "The Will and Belief," in which he considered the bearings of those higher syntheses of experience which are made in the effort to obtain a rational world. The impulses to construct a world can not be chiefly emotional or volitional, as the world is not irrational.

Dr. Furry prepared a sketch of a history of esthetics upon which he is engaged, but illness prevented its presentation. An extended note stating the main characteristics of his genetic point of view will be found in the full report of the meeting in the *Psychological Bulletin* for February 15, 1908.

A psychological method was applied to the metaphysical problem of immortality by Professor Messenger in his paper on "The Desire for Continued Experience." Emphasis was placed upon the radical distinction between endless experience and eternal existence, and the suggestion was made that the vain efforts at logical proofs for the latter should advantageously come to an end.

For his presidential address, Professor Sterrett undertook a discussion of the counter philosophical and scientific tendencies in psychology under the topic of "The Proper Affiliation of Psychology." The address was given only in part, as a basis for the discussion of the topic which followed. He made a special plea for the point of view which regards consciousness as an entity or an activity, and for the "old" introspective psychology as the logical form of any psychology.[1]

In the discussion Professor Hume reviewed the more or less lack

[1] The address will appear in full in the *Psychological Review* for March, 1908.

of affiliation between philosophy and psychology historically, and emphasized the necessity of a close relationship between them, both as to the central issues of the problem of "the soul" and as to the methodological phases of the two lines of endeavor. Professor Ladd insisted that psychology may properly become affiliated with all the sciences which can throw any light upon the problems of consciousness, while at the same time it forms the best possible scientific introduction to philosophy. These affiliations, however, do not involve any necessarily consequent relinquishment of independence on the part of psychology. The current discrediting of psychology is but a passing phase of scientific criticism.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Science and Philosophy of the Organism. HANS DRIESCH. New York: The Macmillan Co. 1908. Pp. xiii + 329.

"I should like to be as careful as possible in the admission of anything like a 'proof' of vitalism. It was want of scientific criticism and rigid logic that discredited the old vitalism; we must render our work as difficult as possible to ourselves, we must hold the so-called 'machine theory' of life as long as possible, we must hold it until we are really forced to give it up." Hans Driesch.

Those who have followed in recent years the reaction against the materialistic and mechanical interpretations of biological phenomena are familiar with the work of Hans Driesch. An invitation to deliver the Gifford Lectures at Aberdeen has furnished Driesch with the opportunity of bringing before a more general audience the conclusions to which his analysis of living phenomena have led. The first volume of these lectures (in English) has just appeared under the title of "The Science and Philosophy of the Organism." The second volume is soon to follow.

Few, if any, zoologists of modern times could bring to the task the many-sided abilities of the author of this volume. Trained in the most modern school of zoology, widely read and interested in philosophy and mathematics, possessed of an analytical mind of rare clearness, frankness, and insight, Driesch has compelled once more the attention of thinking men to the famous doctrine of vitalism.

That Driesch has written a fascinating exposition of his subject few will deny—provided they have not become too callous to consider any other interpretation possible than the current dogmatic materialism. Our purpose is to present Driesch's argument for vitalism and to examine critically the question of the validity of the evidence offered as a *proof* of the doctrine.

Driesch replies to those who maintain that "there are no fundamental

principles in biology which would bring it in any close contact with philosophy" that it will be his endeavor "to convince you that such an aspect of the science of biology is wrong; that biology is an elemental natural science in the true sense of the word. But if biology is an elemental science then, and only then, it stands in close relations to epistemology and ontology. . . ."

"Life is unknown to us except in association with bodies." "There are three features which are never wanting wherever life in bodies occurs. All living bodies are specific in form . . . all living bodies exhibit metabolism . . . all living bodies move." "It is *form* in particular which can be said to occupy the very center of biological interest, at least it furnishes the foundation of all biology." These statements are significant inasmuch as the proof of vitalism is found in Driesch's analysis in the study of form. It will no doubt strike the casual reader as strange that Driesch seeks his proof in form rather than in the psychic phenomena of the living world. It may be that the apparently simpler conditions surrounding form-production have led him to look here rather than elsewhere for the rigorous proof he seeks.

The first proof of vitalism is found in the relations of the parts of the segmented egg to one another. The results of experimental embryology have shown that the fate of each region of the blastoderm is intimately connected with its relation to other parts; "the fate of a part is a function of its position." Each part has potentially—for a time at least—the property of becoming any part of the whole, its location determines its development.

Driesch argues that the factors that determine the fate of each part can not come from without, nor can they come from the interaction of the parts. Therefore some other factor must be invoked to account for the localization of the organs of the embryo. Driesch thinks that while polarity and bilaterality—the main directors of the intimate protoplasmic structure—are given, their interaction could not be responsible for the manifoldness of development. He also believes that chemically different compounds existing in the egg can not account for development, because the form of elementary organs does not go hand in hand with chemical differences, and can not, therefore, depend on them. But since we know very little of the chemical composition of the substances of the egg, it seems to the reviewer that Driesch's argument would be less open to objection had he rested it on the well-known fact that a part already demonstrably specialized can, if severed from the rest, make a new whole, as when the foot end of hydra is cut off and quickly produces a new hydra.

If it is granted, then, that neither external factors nor the presence of chemically different substances in the egg accounts for development, can we explain the process as the result of a complicated machine-like structure preexisting in the egg? This is disproven, Driesch thinks, by the fact that if parts of the segmenting egg are taken away, the remaining parts, as well as those removed, will each produce new wholes. No machine is capable of behavior of this kind!

Since mechanical and chemical explanations fail, it follows that the developmental process must be autonomous. This autonomous factor Driesch calls "entelechy." He states that he will use this term only as a sign of admiration for Aristotle's great genius; "his word is a mould which we have filled and shall fill with new contents."

It will be seen that Driesch's proof rests on a process of exclusion. It fails unless all possibilities of mechanical explanation have been exhausted. To many thinkers the proof will amount only to a demonstration that at present we are ignorant of the factors that determine the formative changes in the developing embryo; but Driesch thinks that his analysis has entirely excluded the possibility of mechanical interpretation.

In this connection it is not without interest to call to mind Lehmann's recent important discoveries concerning fluid crystals. He has shown that a number of organic compounds—some of them, be it noted, known to exist in the living body—assume definite crystalline forms which can be accounted for on purely physical grounds. These crystals can take new matter into themselves and grow accordingly. If a part is removed, it promptly assumes the same form as the original whole. Here we have a machine, any part of it capable of changing into the form of the original whole. It need not be argued from this that the organism is a fluid crystal, although we think not a bad "case" might be made out in favor of this view—nor need we attempt to prove that the formative processes are the same for the fluid crystal and for the living body; but the example suffices to show that there do exist machines of which any given part can reproduce the whole form.

The second proof of vitalism is derived from the power of every individual to produce eggs capable of reproducing the parent organism—a fact so familiar that its use as a proof of vitalism comes as a surprise. Driesch argues that our inability to think of this process as one on the engine-pattern proves the autonomy of the process. But why so? If, as we have seen, a piece of a fluid crystal reproduces a new whole, why may not an egg which is only a piece of an animal arising by cell-division? A difficulty might arise in explaining how the egg divides; but cell-division is not itself put down as evidence of vitalism. To the zoologist the property of the organism to produce eggs appears in the same light as do all other cell-divisions. If the continuity of material (germ-plasm) be admitted, there is no special problem found here; what Driesch means is that since the germ material has taken part already in one development—forming as it does a constituent part of the early embryo—it is inconceivable on a mechanical basis that it could return once more to the starting-point. In part this property is something more than the ability shown by pieces of the embryo or adult to reproduce the whole, since the egg returns to the starting-point while the pieces press on to their goal without going through the early stages again. It will be admitted, we think, that here Driesch puts his finger on one of the most subtle biological phenomena. The difficulty of picturing to oneself how the return can be explained will be admitted by all thinking men.

Those who seek consolation in the idea of the continuity of the germ-plasm—meaning thereby that a stream of undifferentiated material is passed on from one generation to the next—ignore the well-known fact that in most cases all the cells take part in the early development. If it be argued that, although present in the embryonic organs, the germ-material is carried passively along—for which view there is little or no evidence—the fact that differentiated cells that have functioned as parts of the body may likewise return to the embryonic condition and pass through the development will sufficiently cover the case. How serious this difficulty may prove the future must decide.

Driesch's conception of the relation between entelechy and the material through which or by means of which it acts is well brought out in the following statement: "But what about the material continuity appearing in inheritance, which we have said to be almost self-evident, as life is only known to exist in material bodies? Is there not, in fact, a serious contradiction in admitting at the same time entelechy on the one side and a sort of material condition on the other as the basis of all that leads to and from inheritance?" He promises in the second volume to go further into the question; "At present it must be enough to state in a more simple and realistic way what we hold this relation to be. There is no contradiction at all in stating that material continuity is the basis of inheritance on the one side, and entelechy on the other." Both are at work at the same time. "Entelechy, at present, is not much more for us than a mere word, to signify the autonomous, the irreducible of all that happens in morphogenesis with respect to order in the one generation and in the next. But may not the material continuity which exists in inheritance account, perhaps, for the material elements which are to be ordered? In such a way, indeed, I hope we shall be able to reconcile entelechy and the material basis of heredity." The first part of this statement shows that Driesch is not as dogmatic in his advocacy of vitalism as some of his critics would lead us to believe. No serious objection is likely to be raised if one calls autonomous all that is at present irreducible in morphogenesis. On the other hand the attempt to treat the entelechy as something apart from and yet controlling the material basis will seem to most readers, we fear, to come perilously near to mysticism. One satisfying fact emerges from this discussion, namely, that we can, at will, divide the entelechy with a knife by cutting the egg in two, and produce two new entire entelechies thereby. It seems altogether delightful to be able to divide entelechy by so simple a means, but one may doubt whether the problem is simplified when entelechy as well as material is involved in the results.

A serious difficulty to Driesch's view may be found in the production of galls on plants—a difficulty dismissed by Driesch on insufficient grounds, it seems to us. As the result of the presence of a parasitic insect on or in the forming leaf, a complete morphological structure—a gall—is produced. Some of these galls show remarkable adaptations for the benefit of the parasite (but not for the plant) that produces the gall. At the time when the inhabitants of the gall are ready to emerge the gall

opens and sets them free. Now we ask in all seriousness, whence has come the entelechy in the gall? Does the plant contain the entelechy to produce adaptive structures whose presence is injurious to the plant, or does the activity of the enclosed insects introduce a new sort of entelechy into the plant? Obviously it would be advantageous to the plant never to set free the gall's contents, for thereby it would rid itself of its parasites forever.

Whether we agree with Driesch or not concerning the nature of the unknown factors of development, his attempt to hold our interpretation to the more difficult epigenetic lines of thought is, we think, deserving of the highest praise. Choosing the more difficult path, we at least keep open the way for further work and thought.

We have selected for comment that portion of Driesch's book that will, we believe, excite the greatest interest. But the book is enriched by excursions into many other fields more or less related to the main theme here discussed. The treatment of such matters as heredity, descent, adaptation, Lamarckism, the logic of history, etc., contains much original and independent thought. The handling of these matters will be found stimulating and suggestive. The second volume, in which a discussion of the more abstruse matters touched on in the present volume is promised, will be awaited with interest.

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Abriss der Psychologie.[1] H. EBBINGHAUS. Leipzig: Veit und Comp. 1908. Pp. iv + 196.

This book is the original draft, slightly enlarged, of the contribution of Professor Ebbinghaus to Hinneberg's "Kultur der Gegenwart." It is introduced by an admirable sketch (pp. 1–17) of the history of psychology. "Psychology," Ebbinghaus points out, "has a long past, yet only a short history"; and with much discrimination, he indicates the obstacles in the path of the development of a science of psychology, the conditions of the growth of psychology, and the characteristic contributions of the great makers of modern psychology. His references to Spinoza, Hobbes, Hume, Herbart, and the physiologists and physicists of the earlier nineteenth century are especially suggestive.

Following upon this historical chapter comes the first division of the book, a discussion of "Allgemeine Anschauungen." This contains a brief but admirable summary of the physiology of the nervous system and a clear restatement of the doctrine, embodied in Ebbinghaus's "Grundzüge," of Spinozistic psychophysical parallelism. "Soul and nervous system," he declares (p. 39), "are not two separated, interacting [realities] . . . they are one and the same real, on the one hand as it immediately knows itself and is for itself, on the other hand as it exhibits itself to other similar reals when it is experienced by them—seen or touched by them, as we say." This familiar doctrine is based upon a very unconvincing argument. Like so many parallelists, Ebbinghaus assumes

[1] A translation by Professor Max Meyer is announced by D. C. Heath, Boston.

that he has proved his theory when he has shown the objections to the conception of the brain as "tool" of the soul. He would make his chief point—the methodological advantage of a parallelistic treatment of physiological and psychical facts—if, letting metaphysics alone, he laid stress merely on the empirically observed parallelism of the two classes of phenomena.

Ebbinghaus insists upon treating psychology as science of the soul, but he is very careful to define the soul as mere "totality (*Gesamtheit*) of . . . contents and activities" (pp. 41, *et al.*). In the concrete description of forms of consciousness he obviously, however, conceives the soul as far more than this mere *Gesamtheit,* or aggregate. He speaks, for example (p. 143), of "a characteristic independence of the feeling-activity of the soul," explains esthetic emotion through "Verinnerlichung zu meinem eigenen Ich" (p. 173)—in a word, he constantly implies the persistence, uniqueness, and fundamental reality of a soul (better, perhaps, called "self" or "I") which is no sum of parts. Indeed, the only argument of Ebbinghaus, in favor of the Humian theory of soul-as-aggregate, is based on the misconception that the soul (or I), in any other sense, must be a being "apart from" and "opposed to" its experiences. "The soul," he says (p. 41), "has thoughts, sensations, wishes; is attentive, . . . remembers. . . . Yet it is *nothing besides the totality (Gesamtheit) of these contents and activities*—[it is] not a being which would remain over if one were to abstract from all its experiences, or which, as an independent power, could oppose itself to them." By these words, Ebbinghaus is rightly disclaiming the mischievous Lockean fiction of an empty or "simple" soul-substance distinct from the self. But his objection has no force when directed against the conception of conscious self, or I, as fundamental, yet not opposed to its experiences, as persistent and unique (and so *more than* a mere sum of its contents or activities), yet as *inclusive* of these contents. In truth, this conception really underlies Ebbinghaus's own psychology.

The second main division of the book (pp. 43 *seq.*) discusses the elemental phenomena of the life of the soul (*die Elementarerscheinungen des Seelenlebens*). It presents few important divergences from the teaching of the "Grundzüge," in the successive consideration of (*a*) the simplest contents of psychic being (*die einfachsten Gebilde des seelischen Seins*), (*b*) the fundamental laws of psychic becoming (*die Grundgesetze des seelischen Geschehens*), (*c*) the outer effects of psychic events (*die aüsseren Wirkungen der seelischen Vorgänge*). Under the second head, Ebbinghaus seems to have grouped together, with a sort of Kantian heading, all that will not readily fall into his other divisions. Certainly the four topics, attention, reproduction, practise, and fatigue, are incompletely coordinated. Under the first head Ebbinghaus enumerates, as elemental contents, (1) sensations (peripherally excited), (2) sensations centrally excited (*Vorstellungen*), which, he claims, are of radically different nature, and (3) feelings—pleasantness and unpleasantness; for he rejects the Wundtian doctrine of the three dimensions. The most important part of this teaching, in the view of the writer of this notice,

is the admission (pp. 57–60) of certain elemental conscious contents, which Ebbinghaus calls the general attributes (*allgemeine Eigenschaften*) of sensation. In detail, this teaching is open to criticism. Three general attributes are named: spatial relation, temporal relation, and "unity and plurality." But the list is obviously too short—it omits not only two of the "general attributes" which the "Grundzüge" recognizes—the consciousness of likeness and of difference—but others as well, for example, the consciousness of opposition and of degree. Moreover, the differences between the space-consciousness and the consciousness of temporal relation are insufficiently emphasized.

The physiological conditions of sensation are briefly treated. Ebbinghaus does not even allude to the complicated modification of Hering's color theory which he suggested in 1893, but wisely abandoned by the time of the publication of the "Grundzüge." His present preference is for the von Kries theory (pp. 65, 66).

The third division of the book, "Complications (*Verwicklungen*) of the Life of the Soul," discusses, on the one hand, perception, memory and abstraction, speech, thinking and knowing, and believing (*Glauben*); and, on the other hand, feeling and acting. There is nothing peculiarly distinctive, here, in the description or classification. The argument against indeterminism seems inappropriate to a work on psychology.

The closing section on "The Highest Achievements (*die höchste Leistungen*) of the Soul" presents a brief but very interesting treatment of religion, art, and morality regarded as the soul's methods of defending herself against three evils: (1) the unknown future, (2) the inadequate material environment, and (3) evils that rise from social intercourse. This basis of classification has, perhaps, the opposite defects of being uncoordinated and yet a little artificial. For the psychologist, surely, religion and morality are better distinguished from art as having a personal, not an impersonal, object; and are better distinguished from each other in that religion conceives the personal object as divine, whereas morality is a conscious relation to human society. The gist of these distinctions is, indeed, embodied by Ebbinghaus in his teaching. With illuminating emphasis he presses the likeness between the religious and the every-day human relation. "To gain the help of the gods," he says (p. 162), "one must approach them just as one approaches men whose favor one would gain." "The free accomplishment of acts whose objective result is to further the preservation of the totality—these," he says (p. 183), "are the two basal criteria of morality."

No section of the book is, taken by itself, more admirable than that which considers the esthetic consciousness. It is described as pure happiness untouched by desire (*reine begehrungslose Freude*, pp. 169, 171) and the work of art is rightly said to tranquilize and to free the soul. In the detailed discussion of the work of art, the psychological point of view is not so closely held. The introduction of these closing sections is to be warmly welcomed as an indication that psychology is coming back to its own, that the study of sensation and affection, of association and emotion, is recognized as a necessary basis, not as an alternative,

of the study of the most developed and complex and significant of conscious achievements. Thus the little book admirably justifies the sound conclusion that "through the analytic and abstract study of manifold particulars"—and only through such study—one may hope to gain "a clear vision of the bewildering riches of the whole" life of the soul.

It is impossible to withhold comment on a bibliography of such haphazard nature as that of the "Abriss." Exclusive of the brief list of text-books and of the references appended to his historical sections (pp. 16, 17, 155), Ebbinghaus cites five periodicals (all German) and about fifty books and articles (three in French, two in English, the others in German). He makes no allusion to psychologists of the Meinong school and to writers in English who contend for the disputed theory upheld in his doctrine of the general attributes of sensation; he does not refer to Flechsig in his references to writers on the nervous system; and he cites the earlier instead of the later works of several writers (*cf.* p. 17). In so brief a summary it is, of course, unfair to ask for exhaustive references, but Ebbinghaus's omissions are unaccountable unless one assume that his bibliography is made on a basis of personal preference and of accidental acquaintance.

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Kants kritischer Idealismus als Grundlage von Erkenntnistheorie und Ethik. OSCAR EWALD. Berlin: Ernst Hofmann & Co. 1908. Pp. ix + 314.

The aim of this book is at once critical and constructive. The book thus falls naturally into two parts. The first part, which covers about one hundred pages, is a searching criticism of the idealism of Kant. The criticism, however, is positive in its import and forms the basis for the second part of the book, in which are stated in some detail the author's own views concerning the solution of the problems which the critical philosophy forces upon us.

According to Dr. Ewald, the origin of the categories as Kant tried to deduce them can not be thought. And the first part of his book undertakes to point out why this is so. The essence of the discussion seems to be that Kant's fundamental error lies in his failure to differentiate sharply between the problem of perception and the problem of knowledge. Perception is viewed by Kant too much as a creation of the perceiving subject; the categories of the understanding are superimposed, as it were, upon the data of sensuous experience. Subjective idealism is the result. The way around this difficulty is to draw a sharp distinction between the problem of perception and the problem of knowledge, and to hold fast to the position that the latter alone forms the proper object of transcendental criticism. It is by this way that Dr. Ewald hopes to transcend the subjectivism of Kant and to give to the categories, if not complete objectivity, at least all the objectivity which really belongs to them. And the second part of his book develops this position in some detail.

The very least that can be said concerning Dr. Ewald's criticism of

Kant is that it is able and suggestive. On this point there can, perhaps, be no question. The criticism, which is generally fair and sympathetic, is evidently based upon a thorough familiarity with Kant's philosophy, and in many respects it is illuminating. It is a criticism which no student of Kant can afford to neglect.

But when one comes to examine the constructive part of the book, one is bound to feel that the results are problematic. Whether Dr. Ewald meets successfully the very difficulty which he justly finds in the system of Kant is, perhaps, more than questionable. His very sharp distinction between perception (*Anschauung*) and knowledge (*Erkenntniss*), by means of which he hopes to escape the subjective tendencies that seem to have engulfed Kant, ultimately proves to be a rather dangerous partition of experience. The logical result of such a violent division of the process of knowledge seems to be epistemological dualism; and whether the author succeeds in bridging the chasm which he thus makes in the realm of knowledge is, one is inclined to say, more than doubtful. If it be true that the problem of knowledge is *in toto* different from the problem of perception (p. 16), then it certainly is not easy to see how the categories of knowledge bear any intelligible relation to the subject-matter of sensuous experience. The position that the categories approximate realization in the realm of perception (pp. 223, 237, etc.) seems to involve all the weaknesses of Fichte's doctrine concerning objectivity. It would appear that Dr. Ewald is logically in the same predicament in which he finds Kant—bound either to subjectivism or to abstract dualism in his epistemology.

There is one feature of Dr. Ewald's book which is deserving of especial emphasis. Whatever may be the actual results of the book, its purpose is to build upon history. The criticism which the author makes of Kant is not made solely for the sake of criticism; rather is its aim to bring the system of Kant into vital and potent relation to contemporaneous problems, to discover in the system a secure foundation upon which further to build. And this historical attitude, which is ever anxious to learn from past thinkers, to assimilate and expand the truth attained by them and to avoid the errors into which they fell, is an attitude which, in the field of philosophy at any rate, can hardly be too strongly commended. If the book before us had no other merit than this one, it would certainly be worth the while.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. November, 1908. *On the Meaning of Truth* (pp. 579–591): Charles M. Bakewell. – Truth is conceiving an object in its total context. It is grasping the transient fact in its transcendent context. *The Nature and Criterion of Truth* (pp. 592–605): J. E. Creighton. – Philosophic truth not to be confused with the conditioned truth of science or practical need. The estimate of facts

requires a theory of experience, and this is a philosophy. The guide to the philosophic standpoint is the history of philosophy, whence our instruments for interpreting experience are derived. We can not, as the pragmatists try to do, define the nature of truth without reference to metaphysics. *Self-Realization and the Criterion of Goodness* (pp. 606–618): HENRY W. WRIGHT. – Recent criticism of the concept of self-realization as an ethical ideal proceeds from a failure to define properly the function of self. Since the self is an organizing agency, the object of supreme worth is an organized life. *The Hegelian Conception of Absolute Knowledge* (pp. 619–642): G. W. CUNNINGHAM. – Conception is the penetration of the object, which is thereby appropriated and possessed. When Hegel teaches that thought is conterminous with the real he states that experience and reality are one. *Reviews of Books:* Theodor Elsenhans, *Fries und Kant:* ELLEN BLISS TALBOT. W. B. Pillsbury, *Attention:* CHAS. H. JUDD. A. Fouillée, *Morale des idées-forces:* W. G. EVERETT. *Notices of New Books. Summaries of Articles. Notes.*

REVUE PHILOSOPHIQUE. December, 1908. *Le souvenir du présent et la fausse reconnaissance* (pp. 561–593): H. BERGSON. – A criticism of current explanations of the illusion that one is reliving some instants of one's past life, and an interpretation of the phenomenon as a result of the interplay of perception and memory under conditions of a lowered tone of attention to life. *La triple origine de l'idée de Dieu* (pp. 594–612): G. BELOT. – The idea of God is the product of religious tradition, abstract reflection, and ill-defined, unexplained, subjective impressions. *La logique de l'analogie* (pp. 613–636): A. CHIDE. – Logicians are inclined to reduce analogy to second place, but it is involved in the establishment of all categories of inductive and deductive logic. *Revue générale:* F. Picavet, *Thomisme et philosophies médiévales. Analyses et comptes rendus:* Boutroux, *Science et religion dans la philosophie contemporaine:* F. PILLON. Arnal, *La philosophie religieuse de Ch. Renouvier:* J. BARUZI. *Notices bibliographique:* R. de Gourmont, *Promenades philosophiques:* L. ARRÉAT. Voivenel, *Littérature et folie;* Sighele, *Littérature et criminalité;* Mairet, *La simulation de la folie:* CH. BLONDEL. *Revue des périodiques étrangers.*

Avenarius, Richard. *Kritik der reinen Erfahrung.* Edited by J. Petzoldt. Band II. Leipzig: O. R. Reisland. 1908. Pp. xii + 536.

Elsee, Charles. *Neoplatonism in Relation to Christianity.* Cambridge: The University Press. 1908. Pp. xii + 144.

Joyce, George Hayward. *Principles of Logic.* New York: Longmans, Green & Co. 1908. Pp. xx + 431.

Külpe, O. *Immanuel Kant.* Leipzig: B. G. Teubner. 1908. Pp. vi + 163. 1.25 M.

Maclaren, Shaw. *What and Why, Being the Philosophy of Things as They Are.* London: Allen. 1908. Pp. xvii + 118.

Piat, Clodius. *Insuffisance des philosophies de l'intuition.* Paris: Plon-Nourrit. 1908. Pp. 319.

Pigou, A. C. *The Problem of Theism and Other Essays.* London: Longmans, Green & Co. 1908. Pp. viii + 139.

Rasmussen, Knud. *The People of the Polar North.* Compiled from the Danish originals, and edited by G. Herring. London: Kegan Paul, Trench, Trübner & Co. 1908. Pp. xix + 358. £1 1s. *net.*

Richert, Hans. *Schopenhauer.* Zweite Auflage. Leipzig: B. G. Teubner.

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NOTES AND NEWS

THE Pathological Institute, of Wards Island, New York City, has sent out the following announcement: "The Neurological Institute, in Frankfurt on Main, in connection with the Frankfurt Special Classes (help schools) will arrange a two-weeks' course in 'The Problems concerning Feeble-minded and Psychopathic Children.' This is to be given the latter part of June, 1909. Scientific research, clinics, psychology, education and methods, and forensic questions will be the subjects of lectures and courses by specialists. The course is intended for those who are professionally engaged in this work, or are interested in it, or who wish to prepare themselves for it. It aims to offer a basis for extended work, a survey of the whole affair and its practical management. Accordingly the chief emphasis will be laid on practical presentations and demonstrations (anatomical, pedagogical, experimental, and presentation of patients). As far as possible all sides of the subject and their bearing on other branches of knowledge will be considered. The following courses and demonstrations are planned: normal and pathological anatomy of the juvenile brain; child psychology; psychopathology of youth; instruction of the feeble-minded; methods of teaching; organization; hand training; institutional affairs and care for the inmates; clinic for feeble-minded children; care and education in institutions and forensic psychiatry; juvenile courts; social care; speech therapeutics (articulation); hygiene; care for the deaf-dumb, the blind, and cripples. A series of schools for feeble-minded, institutions, clinics, and scientific institutes will be visited. The detailed program will appear in the spring. For particulars address the Committee: Privatdozent Dr. H. Vogt, Neurologisches Institut, Gartenstrasse, Frankfurt a. M., or Rector A. Henze, Wiesenhüttenschule, Frankfurt a. M."

A SERIES of lectures on "Charles Darwin and His Influence on Science" will be given at Columbia University on Friday afternoons, from February 12 to April 16, 1909, in 309 Havemeyer Hall, at 4:10 P.M., with the exception of the introductory lecture, which was given at 11:10 A.M., on February 12, the one hundredth anniversary of Darwin's birth. The lectures, which are open to the public, are as follows: February 12, "Darwin's Life and Work," by Henry Fairfield Osborn;

February 19, "Terrestrial Evolution and Paleontology," by William Berryman Scott; February 26, "Darwin's Influence on Zoology," by Thomas Hunt Morgan; March 5, "Darwin in Relation to Anthropology," by Franz Boas; March 12, "Darwin's Contribution to Psychology," by Edward Lee Thorndike; March 19, "Darwin's Influence on Botany," by Daniel Trembly MacDougal; March 26, "Darwinism and Modern Philosophy," by John Dewey; April 2 (date subject to change), "Cosmic Evolution," by George Ellery Hale; April 16, "Darwinism in Relation to the Evolution of Human Institutions," by Franklin Henry Giddings.

THE Research Club of the University of Michigan celebrated the Darwin centennial on February 17. The president, Professor Wenley, of the department of philosophy, gave the eulogy; Professor Reighard, of the department of zoology, spoke on "Darwin's Contribution to Zoology"; Professor Case, of the department of geology, on "Darwin's Contribution to Geology"; Dr. De Leng-Hus, of the department of botany, on "Darwin's Contribution to Botany"; and Professor Pillsbury, of the department of philosophy, on "Darwin's Contribution to Psychology." Further, in conjunction with the Michigan Academy of Science and the Society of Sigma Xi, the club will hold a public commemoration meeting on April 2, when the address will be delivered by Professor Scott, of Princeton University.

THE Darwin anniversary addresses delivered on Darwin Day before the American Association for the Advancement of Science have all been assembled and will be published at an early date by Messrs. Henry Holt & Company. The title of the volume will be "Fifty Years of Darwinism, Modern Aspects of Evolution and the Various Biological Sciences, Centennial Addresses in Honor of Charles Darwin before the American Association for the Advancement of Science, Baltimore, Friday, January 1, 1909."

PROFESSOR HENRY OSBORN TAYLOR has begun a course of nine lectures on "The Philosophy of the Middle Ages" at the Union Theologicol Seminary. The program is as follows: February 3, "Greek Philosophy as an Antecedent"; February 5, "Intellectual Interests of the Latin Fathers"; February 10, "Carolingian Handling of the Patristic Material"; February 17, "The Second Stage: Gerbert, Roscellin, William of Champeaux, Abelard"; February 19, "Reason and Authority: Abelard. Hugo of St. Victor: Mysticism"; February 24, "Universities: The Mendicant Orders: Aristotle and the Culmination of Scholasticism"; February 26, "Albertus Magnus and Thomas Aquinas"; March 3, "The Whole Scholasticism: Thomas Aquinas"; March 5, "The Breach in Scholasticism: Roger Bacon, Duns Scotus, Occam." The lectures are given in the Adams Chapel at four-thirty o'clock.

THE Society of Anthropology of Paris will celebrate the fiftieth anniversary of its foundation on the seventh, eighth, and ninth of the coming July.